



## THE CITY OF SAN DIEGO **MANAGER'S REPORT**

DATE ISSUED: October 5, 2001 REPORT NO. 01-211

ATTENTION: Committee on Rules, Finance and Intergovernmental Relations  
Agenda of October 10, 2001

SUBJECT: Energy Conservation and Management Status Report No. 7

REFERENCE: Manager's Report Nos. 01-031, 01-062, 01-115, 01-137, 01-175 & 01-183

### SUMMARY

THIS IS AN INFORMATION REPORT. NO ACTION IS REQUIRED ON THE PART OF THE COMMITTEE OR THE CITY COUNCIL

### BACKGROUND

On February 12, 2001, City Council directed the City Manager to implement Mayor Murphy's recommendation to establish an energy oversight position to administer San Diego's efforts toward achieving energy self-reliance and conservation. Following an initial report to the Rules Committee on February 21, 2001 regarding the energy emergency and the status of the City's energy conservation and management efforts, the Environmental Services Department was directed to provide the Committee with monthly status reports. This is the seventh status report in response to the Committee's direction.

### DISCUSSION

#### **Summer Energy Emergency Review**

In its March 22, 2001 "Summer Energy Outlook Report", CAISO, the State's "energy manager," projected peak daily energy demand levels and operating reserve requirements in California

would reach 50,000 MW during June, July, August and September exceeding available energy supplies and resulting in up to 35 days of rolling blackouts during those months.

Through a combination of energy conservation efforts and a cooler than normal summer, peak weekday energy demand was significantly lower (as much as 16%) than had been predicted by CAISO. At the same time, higher levels of reliable energy supplies were available because of long-term energy contracts, new generation facilities coming on line and imported energy. As a result, there were **no** rolling blackouts in California during the entire summer and only two days in early July where Stage 2 Emergency Alerts were declared when energy reserves dropped to below 3%. However, this increased level of energy reliability came at a high price that is now being passed on to consumers through energy rate increases of up to 20% effective October 1, 2001, that are expected to remain in effect for years to pay the cost of State energy purchases.

### **New Statewide Energy Generation**

On February 9, 2001, the Governor issued an Executive Order streamlining the permitting process for new “peaker” power plants with the goal of bringing a significant amount of new electric power generation capacity on line by September 30, 2001. Peaker power plants are intended to operate part time during periods of peak energy demand to supplement “base load” power plants such as the Encina Power Plant or San Onofre Nuclear Power Plant. The new regulations were intended to permit projects within 21 days of the developer submitting a complete project permit application. Two projects, the Larkspur Energy Project in San Diego and the Indigo Energy Project near Palm Springs were each permitted in a record 19 days.

Under the expedited permitting process and construction schedules, the State added 1,815 megawatts of new generating capacity by September 30, 2001. An additional six plants are under construction and will add 733 megawatts of generating capacity by the end of the year.

As an indication that California’s energy supply and demand is back in balance, the developers of 14 power plant projects that would have added 1,705 megawatts of new electrical energy generation capacity have withdrawn their permit applications from CEC consideration.

### **State Energy Purchases**

On January 17, 2001, Governor Davis issued an Executive Order directing the California Department of Water Resources to purchase electricity for California’s utility companies when the creditworthiness of the private utilities became questionable and major energy generation companies refused to sell power to them.

The total cost of energy purchased by the State Department of Water Resources for SDG&E, PG&E and SCE customers during January through August 2001 was in excess of \$10.4 billion. On September 19, the Governor announced the State purchased \$815 million of energy in August continuing the downward trend of energy costs. That is less than half of the \$2 billion cost for

energy in May, \$200 million less than June and almost \$100 million less than July. As shown in the following table, the average cost per megawatt hour (MWH) of energy in August was about 40% of the January cost; but still several times the pre-deregulation cost per MWH.

### **State Energy Purchase Costs**

<b>Month 2001</b>	<b>Avg. Daily Cost</b>	<b>Total Avg. Cost Per MWH*</b>	<b>Spot Market Avg. Cost Per MWH</b>
<b>January</b>	<b>\$39 million</b>	<b>\$332</b>	<b>\$321</b>
<b>February</b>	<b>\$51 million</b>	<b>\$304</b>	<b>\$308</b>
<b>March</b>	<b>\$58 million</b>	<b>\$261</b>	<b>\$271</b>
<b>April</b>	<b>\$62 million</b>	<b>\$269</b>	<b>\$331</b>
<b>May</b>	<b>\$65 million</b>	<b>\$243</b>	<b>\$271</b>
<b>June</b>	<b>\$35 million</b>	<b>\$168</b>	<b>\$113</b>
<b>July</b>	<b>\$30 million</b>	<b>\$146</b>	<b>\$78</b>
<b>August</b>	<b>\$26 million</b>	<b>\$131</b>	<b>\$53</b>

\* Average cost per MWH is a blend of long and short-term contact prices and spot market costs.

### **City Energy Usage and Cost**

Increased energy rates since deregulation have significantly impacted the City's total cost of electrical energy even though energy usage in City facilities has decreased since May 1999. The following table shows the impact of energy cost increases from FY2000 to FY2001:

<b>FY 2000 Usage</b>	<b>FY 2001 Usage</b>	<b>Usage Change</b>	<b>Percentage Change</b>
210,353,551 kWh	210,881,247 kWh	+ 527,696 kWh	+ 00.25%
<b>FY 2000 Cost</b>	<b>FY 2001 Cost</b>	<b>Cost Change</b>	<b>Percentage Change</b>
\$17,697,249	\$32,442,406	+ \$14,745,157	+ 83.32%
<b>Jan-Jun 2000 Usage</b>	<b>Jan-Jun 2001 Usage</b>	<b>Usage Change</b>	<b>Percentage Change</b>
99,348,788 kWh	92,612,985 kWh	- 6,735,799 kWh	- 6.8 %
<b>Jan-Jun 2000 Cost</b>	<b>Jan-June 2001 Cost</b>	<b>Cost Change</b>	<b>Percentage Change</b>
\$8,270,186	\$15,288,155	+ \$7,017,969	+ 84.8%

### **Retroactive Energy Cost Rebates**

When the cost impacts of deregulation first became apparent, the Legislature enacted AB265 that placed a ceiling of 6.5 cents per kWh on energy, retroactive to June 2000, for customers with a monthly demand of less than 100 KW during nine of the preceding 12 months. In its First

Extraordinary Session of 2001, the Legislature enacted AB 1X 43 which extended this rate cap to customers with a monthly demand greater than 100 MW retroactive to February 2001.

On July 12, 2001, the California Public Utility Commission passed a resolution enabling larger customers to be covered by the initial rate ceiling for SDG&E's customers back to June 2000. The new criteria allows larger customers to receive a credit for the difference between 6.5 cents per kWh and the actual cost of energy billed in any month in which demand was less than 100 MW between June 2000 and February 2001. Any customer that believes it would be eligible for a credit must submit a request for a review of their energy use back to June 2000 no later than October 22, 2001.

Energy Conservation and Management Division staff has identified 110 City accounts that should be eligible for credits under this new CPUC ruling and submitted them to SDG&E for review. The first two accounts reviewed by SDG&E received a substantial credit against their current energy charges. The Police/Fire Station complex on Eastgate Mall received a credit of \$50,288.91 and the Willie Henderson Sports Complex received a credit of \$7,242.07. Because actual energy costs varied widely during 2000, we cannot predict the amount of rebate credit the City will be eligible to receive, but are optimistic that it will be substantial based on the results from the two accounts reviewed.

#### **City of San Diego Summer Action Plan – 20/20 Rebates**

On June 19, 2001, Council approved the City's Summer Energy Action Plan with its goal of reducing energy consumption in City facilities by 15% compared to last summer's energy usage. City departments have implemented the energy conservation measures in the plan with excellent results.

Under the State's 20/20 Energy Rebate Program, SDG&E customers that reduce energy use by 15% or more during June through September 2001, compared to the same months last year, receive a 20% rebate off the electric energy portion of their current energy bill. When combined with the savings from the reduced amount of energy consumed, total savings are in the range of 30 to 35% compared to the prior year's bill. Since this program became effective, a total of 2,908 City facility electric energy bills showed reductions in energy consumption of 15% or more and qualified for \$116,112 in 20/20 rebates and total energy cost savings of about \$350,000 compared to the same period last year.

#### **Winter Energy Savings Plan**

With the end of the Summer 2001 Energy Emergency period on September 30, many employees are asking if the City can go back to using energy as it did before the start of the energy emergency. The simple answer is no. Although it appears we have moved beyond the summer energy supply crisis, we will still have to deal with higher energy costs resulting from the aftermath of deregulation for years.

The City's energy bill has doubled since deregulation, in spite of all of our energy efficiency projects and conservation efforts. The new electrical energy rates effective October 1, 2001 have the potential to increase City energy costs by \$3 million per year or more, so continuing energy conservation measures to help control City energy costs is still important.

As a result of these extraordinary events and higher energy costs, the Summer Energy Action Plan needs to stay in effect through the Fall while a Winter Energy Savings Plan is developed. A draft plan will be circulated to the operating departments for review in October and distributed to City employees in November. The plan will focus on actions City employees can take to use energy wisely and reduce energy consumption without impacting their comfort or productivity.

### **SDG&E Revised Energy Rates**

On September 27, 2001, the California Public Utilities Commission issued a decision covering a Servicing Agreement between SDG&E and the California Department of Water Resources (DWR). This agreement covers the terms and conditions under which SDG&E will provide transmission and distribution of DWR-purchased electricity to SDG&E customers, as well as billing, bill collection and related services.

The decision also included an energy rate increase, effective October 1, 2001, designed solely to meet DWR's financial needs to pay for the electrical energy purchased for SDG&E's ratepayers. The rate increase will be system-wide to both residential and commercial accounts; however, the entire rate increase will be dedicated to meet DWR's revenue requirements and SDG&E will not receive any additional revenue as a result of the rate increase.

### **Changes To Monthly Energy Bills By Customer Class**

<b>Customer Class</b>	<b>Current Bill</b>	<b>New Rate Bill</b>	<b>Percent Increase</b>
Residential – 250 kWh usage	\$32.10 Summer \$32.10 Winter	\$32.10 Summer \$32.10 Winter	0% 0%
Residential – 500 kWh usage	\$70.33 Summer \$68.55 Winter	\$71.95 Summer \$70.09 Winter	2.3% 2.2%
Small Commercial – A Rate 500 kWh usage	\$78.23 Summer \$74.02 Winter	\$93.46 Summer \$79.18 Winter	19.5% 7.0%
Medium Commercial A-Rate 1500 kWh usage	\$218.69 Summer \$206.05 Winter	\$264.39 Summer \$221.54 Winter	20.9% 7.5%
Large Commercial A Rate 10,000 kWh usage	\$1,412.60 Summer \$1,328.30 Winter	\$1,717.26 Summer \$1,431.54 Winter	21.6% 7.8%

The new electric energy rate structure is designed to have a minimum impact on residential rates and to place the majority of the increased cost on commercial customers using large amounts of

energy during the summer when energy purchased by the State Department of Water Resources is most expensive. The City's current total annual electric energy cost is approximately \$32 million. Based on the new rate structure, the City's energy costs could increase by as much as \$3 to \$5 million per year

## **City Energy Projects and Activities**

### **Photovoltaic Project Status**

The review of the responses to the City's Request for Qualifications for the design and installation of future photovoltaic energy generation systems on City facilities was completed on September 14, 2001. A total of nine design/build teams participated in the interview process. Teams that achieved a score of 80 points or more in the review process were selected for a photovoltaic design/build short list for a period of one year. Firms selected for the short list will be eligible to submit proposals for any City photovoltaic projects initiated within the next year. The five teams that qualified to propose on City projects are:

Kerr Light Corporation  
Kyocera Solar  
Miralles, Wu & Shimizu  
Power Lite Corporation  
Siemens Buildings Technologies

The first Request for Proposal (RFP) is for the design and installation of photovoltaic systems on five City facilities. Those facilities include two Environmental Services Department facilities, the Ridgehaven "Demonstration Green" Building and Environmental Services Operations Center on Miramar Place, and three Metropolitan Wastewater Department buildings MOC I, II & III, on Kearny Mesa. The timelines for those projects are as follows:

RFP ready for distribution	October 16, 2001
Contractor's Proposals Due (30 day proposal period)	November 16, 2001
Proposal review by City staff	December 3, 2001
Docket projects for Council consideration	January 7, 2002
Issue Notice To Proceed for project construction	January 21, 2002

Under this schedule the projects will all be completed prior to Summer 2002 when energy savings will be most needed.

### **Conversion of Traffic Signals to LED Bulbs**

Over the past few years, in excess of 30,000 red and green bulbs in the City's traffic signals have been converted from incandescent bulbs to light-emitting diode (LED) bulbs that are over eight times more energy efficient and significantly reduce energy consumption and costs.

Since June, traffic signals have received almost \$40,000 in rebates through California's 20/20 Energy Rebate Program because energy use was reduced by more than 15% compared to the prior year's usage.

When the State transferred Rosecrans Street and Balboa Avenue to the City for maintenance that added 30 signalized intersections to the City's inventory of 1,410 signalized intersections. While CalTrans converted the red bulbs at those intersections to LED bulbs, there are 492 green incandescent bulbs that need to be converted. At last count, there are 1,561 green incandescent bulbs, including the 492 bulbs in CalTrans signals, at City traffic signals that need to be converted to LED bulbs. The total cost of the conversion is \$196,674 plus approximately \$20,000 in overtime for City crews to change out the bulbs. The estimated savings in energy costs resulting from the conversion to LED bulbs is \$45,000 per year or a 2.6 year simple payback.

The City has obtained a commitment of \$80,000 from SDG&E to fund the conversion of a portion of the traffic signals to LED bulbs. Street Maintenance Division is proposing to use those funds to convert 492 green bulbs at the 30 intersections transferred from CalTrans plus additional green bulbs at other City intersections to completely use the rebate funds available from SDG&E. Staff is currently evaluating options for financing the cost of replacing the remainder of the green incandescent bulbs with LED bulbs.

### **Energy Account Review and Validation**

The City currently has in excess of 2,800 individual electric meters and accounts for City facilities. The number of accounts changes each month as new facilities are added or temporary accounts are closed.

The electric accounts are received in 118 "Group Bills" or long form bills, of which 92 "Group Bills" are on 12 payment cycles per year and 28 "Group Bills" are on 24 payment cycles per year. Currently the data base information contains the address, meter number, responsible department or program and accounting data. Accounts are not currently identified by facility name such as Fire Station 20, Point Loma Library, Pump Station 64, etc. which does not allow for user friendly reports to be developed and sent to the responsible departments on a monthly basis.

As part of the process of shifting from paper energy bill receipt, processing and payment to electronic bill receipt, processing and payment, it will be necessary to validate each account and its associated accounting information. This will include insuring that each account billed to the City is in fact for a City facility and that it is billed to the correct department. As part of the validation process, additional information such as facility name, size, use, age, etc. will be gathered and added to the database. The validation process will start in October and should be completed by the end of the year.

Once the validation process has been completed, the City will enter into an electronic data interchange (EDI) agreement with SDG&E and begin a six-month transition process that will result in energy bills being received, processed and paid electronically.

### **Library Energy Audits**

At the request of the Library Department, Energy Program staff met with SDG&E staff and negotiated for SDG&E to conduct energy audits of all City branch libraries this fall. The audits will identify all energy systems, evaluate the condition and energy efficiency of existing systems, analyze the impacts of improvements to or replacement of existing energy systems and provide the City with an energy audit report.

The audit report will recommend improvements to existing energy systems, estimated costs of implementing the recommendations, an estimate of energy savings that could be achieved by implementing the recommendations and a simple pay back analysis. These reports will allow staff to develop a plan and set priorities in seeking funding to improve the energy efficiency and reduce the long-term cost of energy used by the branch libraries.

### **CONCLUSION**

The Summer 2001 energy supply and reliability crisis seems to have been resolved. However, energy reliability came at a high cost as evidenced by the energy purchase costs incurred by the State that are now being passed on to consumers through energy rate increases effective October 1, 2001.

The City's Summer Energy Action Plan achieved its desired result with 2,908 City facility energy bills receiving 20/20 rebates of \$116,112 and total energy cost savings approaching \$350,000 to date.



It is now time to shift the City's focus from responding to the Summer 2001 energy emergency to implementing long-term energy efficiency projects, such as the Miramar Place Operations Station photovoltaic energy generation project and energy audits of the branch libraries, to deal with energy issues during Summer 2002 and control costs in the new era of higher priced energy.

Respectfully submitted,

Approved by:

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LOVELAND/HAYS/RAE